

Investigation and Study on the Situation of Emergency Human Resource in Disease Control Agencies in Henan

Jing Sun^{1, a}

¹ Luohe Medical College, Luohe, Henan, China, 462000

^a email

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Abstract. Objective: To investigate the situation of health emergency human resources in disease prevention and control institutions and to provide scientific basis and policy recommendations for the rational allocation of human resources in the disease prevention and control institutions. Methods: the questionnaire was used to collect personal data of health emergency personnel in Henan province disease prevention and control institutions. Results: 2729 of the existing emergency personnel, Henan disease prevention and control institutions, including technical personnel accounting for 80.73% and management personnel accounting for 19.27%; the age structure is fusiform, with 35-44 age group, accounting for 38.77% (1058 /2 729); with junior college and technical secondary school, together accounted for 75.71% (2066 /2 729); title at the intermediate level, accounting for 49.54% (1 352/2 729); from preventive medicine professional staff most, accounted for 48.11% (1313 /2 729); different disease prevention and control institutions between the personnel quality score is not balanced, provincial, municipal and county scores were 8.48 points, 7.67 points, 5.89 points. The average quality of the provincial personnel the score is 1.11 times of the municipal, county level 1.44 times. Conclusion: adjusting and improving the disease prevention and control mechanism of public health emergency human resources, strengthening the input of public health of the government, improving the emergency response mechanisms of continuing education and training, establishing a long-term mechanism for the construction and development of human resources

The health human resource is an important part of a national health system. Health emergency personnel are the important component of the emergency human resource. In order to accurately grasp the status of human resources for health emergency Hubei Province, to strengthen the construction of emergency personnel, optimize the allocation of human resources, improve the disease prevention and control institutions (CDC) the emergency ability and level, and provide a theoretical basis and policy recommendations to promote disease prevention and control the cause of sustainable development, the author investigated and studied the situation of emergency human resource in three level (province, city and county) disease control agencies in Henan in June to August in 2014.

Object and Method

Information Source. The data involved in this paper are derived from the survey data of disease prevention and control system construction in Henan province. According to the unified design

questionnaire of the disease prevention and control system of the Ministry of health, the status quo of health emergency human resources of 98 disease control institutions in the provinces, cities and counties was investigated and analyzed.

Research Methods. C The analysis methods used in this study include general descriptive analysis, variance analysis, and so on. The overall quality of human resources is calculated by the combination of educational background, professional title and age, and the specific formulas are as following:

Score of comprehensive quality of personnel:

$$W=A \cdot E+B \cdot T \quad (1)$$

Score of comprehensive quality of personnel:

$$W=A \cdot E+B \cdot (T-(Y-\square Y-0167s)) \quad (2)$$

Score of comprehensive quality of personnel:

$$W=A \cdot E+B \cdot (T+(Y-Y-0167s)) \quad (3)$$

Standardized Value of the score of comprehensive quality of personnel:

$$WS= (W-\min (W)) / (\max (W)-\min (W)) \quad (4)$$

Total score of comprehensive quality of personnel in an organization:

$$U=EWi \quad (5)$$

Average score of comprehensive quality of personnel in an organization:

$$U=EWi/Ni \quad (6)$$

Formula 2 applies to the age of more than a specific academic title, the average age of 0.67 standard deviation of the situation; formula 3 is suitable for age below the specific qualifications, the average age of a specific title. Among them E for education, T for the title, Y for age, a and p are the weight coefficient, according to expert consultation results a is 0.7L, R is 0.29. Using the formula 4, 5 and 6 respectively calculate the unit manpower comprehensive quality score standard value, unit manpower comprehensive quality total score and unit manpower comprehensive quality average score, then carries on the statistical analysis.

Quality Control. To ensure the quality of data information, prior to the survey held investigator training, unified investigation methods and requirements, and the pre survey conducted during technical guidance; after the end of the investigation. Data entry by the unified training of professional personnel to double independent input, and in the database to set a logical check procedures, to ensure the quality of data entry.

Statistical Analysis. We use the Epidata 3 to establish the database, using SPSS 12 statistical software package for data analysis and processing. $P < 0.05$ for the difference was statistically significant.

Results

Basic Conditions. Until the end of 2005, the province level three CDC post health emergency personnel 2 729 people (male 1 954 people, accounting for 71. 65%; female 775 people accounted for 28. 4%, accounts for disease prevention and control of the total number of staff in 32. 6% health emergency personnel, professional and technical personnel 2 203 people, accounting for 80. 73%, 526 management personnel, accounting for 19.27% according to the results of investigation, the provincial health emergency personnel services per capita area 12 68. The LMU was, service population per capita for 22 088.

Age Distribution. The province disease prevention and control emergency services personnel age were composed of spindle shaped, 35 - 44 age group dominated, accounted for 38. 77%, 25 - 34 and 45 to 54 age group accounted for 28.29% and 27.01%.

Degree Distribution. The province disease control and prevention mechanism of emergency response personnel qualifications to junior college and technical secondary school, the two together accounted for 75.71% (2066/729), undergraduate education accounted for 20.04% (547/729), junior high school and below accounted for 2.38% (65/729), master's degree and above accounted for only 1.87% (51/729) at the provincial, city and county / District disease prevention control mechanism of master and above proportion decreased; the highest provincial and municipal CDC proportion of undergraduate degree highest county / district secondary school degree scale.

Professional Title Distribution. The province disease prevention and control institutions emergency personnel titles to intermediate based, accounted for 49.54% (1352/729). 09% (794/729); senior titles accounted for 15.54% (424 / 729), and no title personnel engaged in emergency work, accounted for 5.83% (159/ 29) province, city and county disease prevention and control institutions, senior title form in order to reduce the proportion of; and county / District disease prevention control mechanism primary and below the title was significantly higher than the proportion of the proportion of provincial 25.55%.

Major Distribution. The composition from the perspective of the specialty, the provincial disease prevention and control institutions of emergency personnel from preventive medicine (public health and health inspection) the highest proportion, accounting for 48.11% (1313/2729), significantly higher than the national CDC staff ratio of 25%. In order to reduce the proportion of provincial level, accounting for 81%, significantly higher than 46.9% and 44.68% of the city and county proportion; from the proportion of provincial clinical medical specialty the disease prevention and control institutions (4.41%) was significantly lower than that of the city and county / district level the proportion of 24.34% and 30.34%.

Comprehensive Quality Distribution. Research results show that the province's disease prevention and control institutions of the comprehensive quality of the average score of 6.38 points. Levels for disease prevention and control institutions comparative analysis found that the average score of the provincial CDC emergency personnel comprehensive quality highest 8.48 points, municipal CDC emergency personnel comprehensive quality scored an average of 7.67, county / District CDC emergency personnel comprehensive quality average score lowest 5.89, variance analysis showed that, different levels of CDC emergency personnel comprehensive quality mean score differences have statistical significance ($F = 245.27, P < 0.001$) and all levels of disease prevention and control institutions of all staff comprehensive quality score compared, emergency personnel comprehensive quality score significantly higher. The analysis results showed that the differences were statistically significant ($F = 4.57-53.2, P < 0.05$).

Discussion

Health emergency human resource is a kind of special human resources. Due to the scale of the size and the time and location of emergency public health events are uncertain, so health emergency human resources configuration needs to have a certain degree of uncertainty, but if you do not enter the rational allocation of health emergency human resources, until the event occurs and temporary personnel deployment, often delay the timing of public health emergencies, resulting in the loss of is far greater than the cost of the rational allocation of personnel. In 2003, an outbreak of the SARS crisis was a good example. The results of the investigation and analysis show that the problems in the allocation of emergency personnel of the provincial disease prevention and control institutions are mainly manifested in the following aspects: Firstly, Education level is low, and the characteristics of the profession knowledge intensive contradictory. For a long time on the development of public health human lack of awareness of the importance, regular hospital school,

college graduates rarely enter the health emergency response team, especially county health emergency response team, the low academic level and professional personnel, secondary education of high proportion. Secondly, title structure is unreasonable: melon of province, city, county three level disease prevention and control institutions senior emergency personnel proportion of decreased, senior 55% more concentrated in provincial and municipal disease prevention and control institutions in public health emergencies in the first line, for 80% of the rural population and the county emergency personnel in the proportion of high title is less than 1%. Finally, professional source structure unreasonable: to prevent medicine and clinical medicine professional sources, the lack of a with high health view of modern public management ideas and modern management skills of high-level, high-quality health emergency response team. The concept of aging and professional skills cannot adapt to the actual requirements of dealing with the sudden public health incidents.

Emergency staff is a dynamic new and human resource to improve the institution of disease prevention and control of public health emergency human resource. The author put forward the following countermeasures and suggestions: Firstly, to strengthen the management function of government: the government should be combined with the characteristics of business institution of disease prevention and control of public health emergencies, formulate a scientific and standardized personnel access system and human resource allocation standards; strengthen the vertical and lateral exchanges of human resources. Secondly, to increase input in public health: according to statistics of China health expenditure accounts for GDP, public health expenditure accounted for only 1% of total health expenditure, and most developed countries public health fee accounted for the proportion of total health expenditure has reached 50%. Although the country to increase the country's investment in public health and support, but for heavy physical talent investment, talent investment lags behind physical investment, ignoring the phenomenon of talent capital deserves attention. Thirdly, to reform and adjust the professional technical personnel team of professional sources: the response to public health emergencies is a set of technology and management in one of the practical activities. The professional structure of the health emergency response personnel of the United States, France and other developed countries includes not only preventive medicine and clinical medicine, but also includes the health management, law, economics, politics, sociology, statistics, psychology. And the expertise of our public health emergency response personnel to medical knowledge to give priority to, the lack of humanity and other cross disciplinary knowledge, difficult to adapt to the new situation of sudden public health emergency work demand. Finally, to perfect the education and training of emergency response mechanism: We should attach great importance to continuing education, training plan formulation, incentives, actively encourage professional and technical personnel learning of new knowledge, new ideas to improve their own quality. At the same time, we can send personnel to the higher level unit for further study to promote the improvement of the overall quality and ability level of the public health emergency response team.

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References

- [1] Gong Youlong, Yan Fei, Feng Lingfang, Chinese Rural Health Service Administration, Vol. 17 (1997) No 3, p.3-5
- [2] ChantAD, JR SocMed, Vol. 91 (1998) No2, p.63-65
- [3] Wang Longde, Handbook of Health Emergency Response, People's Medical Publishing House, 2005.
- [4] Jiang Xiaoming, Wang Wei, Song Baoliang, Chinese Health Resources, Vol. 4 (2001) No 2, p.73-75
- [5] Xie Hongbin, Luo Li, Su Zhongxin, Journal of Hygiene Research, Vol. 34 (2005) No 4, p.390-392
- [6] Wang Yin, Luo Li, Sun Mei, Journal of Hygiene Research, Vol. 34 (2005) No 5, p.513-535